VIDEOLOGY®
IMAGING SOLUTIONS INC.

LCD MONITOR USER MANUAL

45M32 32" POP / PIP

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This document provides technical information for the user. Videology reserves the right to modify the information in this document as necessary. The customer should make sure that they have the most recent manual version. Videology holds no responsibility for any errors that may appear in this document.

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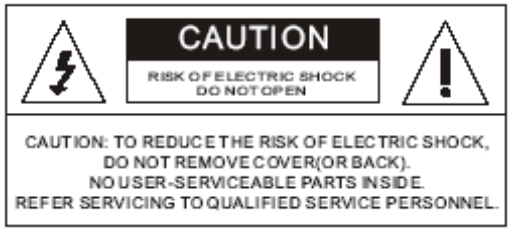
1. Warning

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK:
DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.
DO NOT INSERT ANY METALLIC OBJECT THROUGH VENTILATION GRILLS.

CAUTION:


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER(OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

Explanation of Graphical Symbols

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of non-insulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

2. Precautions

2.1. Safety

Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by the qualified personnel before operating it any further. Unplug the unit from the wall outlet if it is not going to be used for several days or more. To disconnect the cord, pull it out by the plug. Never pull the cord itself. Allow adequate air circulation to prevent internal heat built-up. Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.

2.2. Installation

Do not install the unit in an extremely hot or humid place or in a place subject to excessive dust or mechanical vibration. The unit is not designed to be waterproof. Exposure to rain or water may damage the unit.

2.3. Cleaning

Clean the unit with a slightly damp soft cloth. Use a mild household detergent. Never use strong solvents such as thinner or benzine as they might damage the finish of the unit.

Retain the original carton and packing materials for safe transport of this unit in the future.

3. Federal Communications Commission (FCC) Statement

This Equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

You are cautioned that changes or modifications not expressly approved by that party responsible for compliance could void your authority to operate the equipment.

This device complies with Part 15 FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.
(2) This device must accept any interference received including interference that may cause undesired performance.

4. Features

- Compatible with VGA (640 x 480), SVGA (800 x 600), WXGA
- Support vertical refresh rate up to 75 Hz for VGA, SVGA, WXGA
- Automatic or manual detection of separate synchronize and composite synchronize of VGA signal
- 31.5-inch LCD monitor with multiple inputs (Composite video, Y/C and D-sub computer and DVI (option))
- High brightness of 500 cd/㎡
- 3D comb filter
- High contrast 1500:1
- High quality Horizontal and Vertical Scaling with 3D De-interlacing for Display
- Wide viewing of 178, vertical and178 horizontal.
- Fast LCD response time of 8ms
- Luminance transient improvement (LTI), Chrominance transient improvement (CTI)
- Video input support NTSC / PAL standard
- Built-in high precision Y/C Input signal
- Video out support auto termination (75 Ohms)
- Audio live-out function with stereo phone Jack output
- Build-in 2W+2W speaker
- IR remote control Enabled
- VESA standard (75mm/100mm) bracket
- Wall mountable capability

5. POP

Picture On Picture (same as 1/2)

6. PIP

Picture In Picture

a. It can select 5 sizes from 1/16 to full screen. (1/16, 1/9, 1/4, 1/2, full)

***1/9

***1/4

**1/2

b. There are 5 positions

**Center

**Lower Right

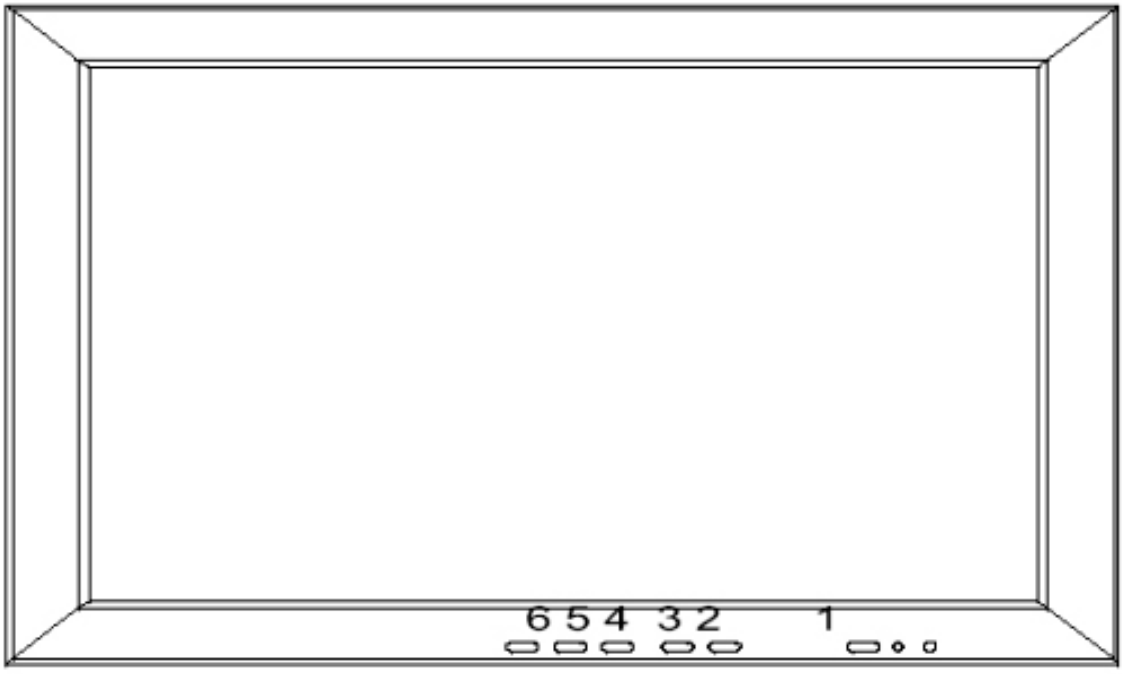
** Upper Right

**Lower Left

**Upper Left

7. Operating Instructions

7.1. Control



1. **Power**
   Monitor power ON / OFF. At OFF mode, monitor will be at standby status
   LED Green Light - Power On
   Red Light - Standby mode

2. **Adjust** ⇦
   Increase the value on the OSD menu or turn ON / OFF function

3. **Adjust** ⇨
   Decrease the value on the OSD menu or turn ON / OFF function

4. **PIP (Option)**
   PIP/ POP/ function selection

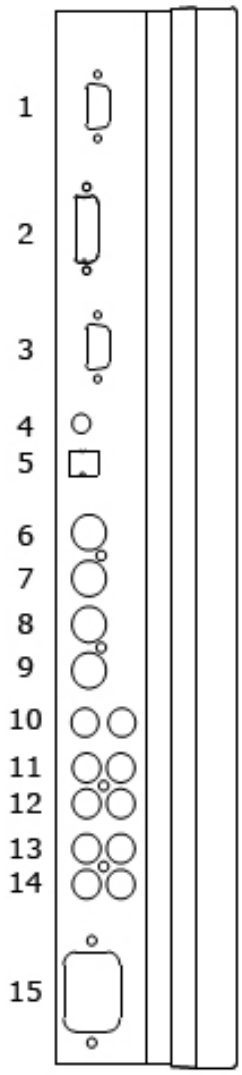
5. **Menu**
   OSD menu selection

6. **Source**
   Select input signal from AV1, AV2, S-Video or PC

***Note: PIP & POP Operating (Option) – KEY Control**

a. Push "PIP" key to open the Sub-picture, then push "PIP" key to select the sub-picture size on screen 1/16 > 1/9 > 1/4 > 1/2 > full.
b. Push down key to select the Sub-picture position on screen.
c. Push up key to select the Sub-picture source.
d. Push source key to select the Main-picture source.

8. Connectors



1 **RS-232 IN** (Option)
2 **PC DVI- IN** (Option)
3 **PC VGA-IN**
4 **AUDIO LIVE OUT** (Stereo)
5 **DC12V/ 1A OUT** (Option)
6 **VIDEO 1 IN**
Composite signal Input for VIDEO 1
7 **VIDEO 1 OUT**
Video looping output for VIDEO 1
8 **VIDEO 2 IN**
Composite signal Input for VIDEO 2
9 **VIDEO 2 OUT**
Video looping output for VIDEO 2
10 **Y/C IN (S-Video)**
Y/C separated signal Input
11 **AUDIO 1 IN (L, R)**
Audio signal input, this input is for Av1
12 **AUDIO 1 OUT (L, R)**
Audio Looping output, for AUDIO 1
13 **AUDIO2 IN (L, R)**
Stereo Audio Signal Input, this input is for Av2, PC or Y/C (refer to Note below)
14 **AUDIO 2 OUT (L, R)**
Audio Looping output, for AUDIO 1
15 **AC IN**

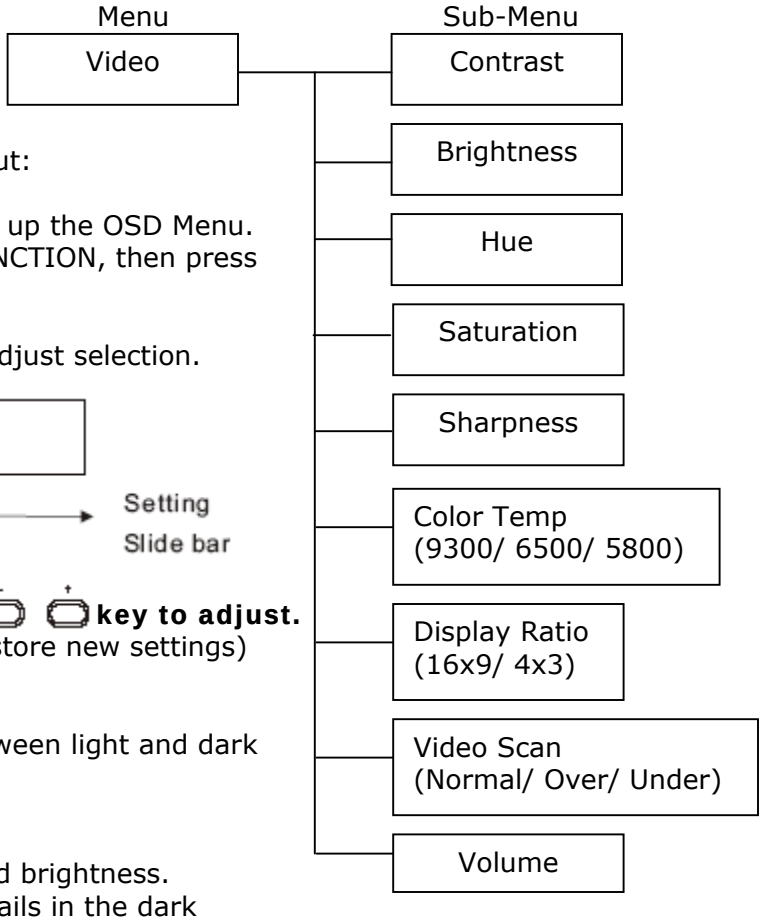
Note: Audio out is muted until video is present

Audio Connections

	Audio 1	Audio 2
PC		√
AV1	√	
AV2		√
S-Video		√

9. OSD Architecture

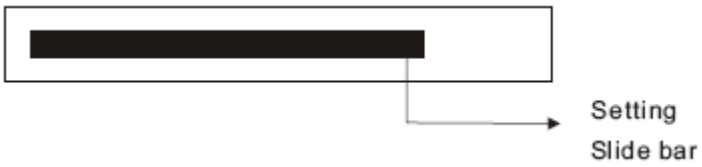
9.1. Video Function



Press **SOURCE** to select a video input:

Press the FUNCTION button to bring up the OSD Menu.
Press ⇦ ⇨ again to select FUNCTION, then press SELECT twice to enter submenu.

As shown, press ⇦ ⇨ keys to adjust selection.



Note: On remote control, press - + key to adjust.
(After adjustment, the monitor will store new settings)

Contrast
Permits adjustment for contrast between light and dark areas of the picture.

Brightness
Adjusts the overall picture shade and brightness.
Tip: Use the Brightness to make details in the dark areas of the picture to be just visible, and contrast to brighten the picture without causing video noise and foreheads to turn white.

Hue
Adjust all the colors on the screen, but is most noticeable to the eye in reds and yellows, and is also usually set for pleasing face tones.
Note: Appears in NTSC mode only.

Saturation
Adds coloring to the black and white picture content (of a color signal), and is usually set for viewer's preference in color saturation.

Sharpness
Sets the desired sharpening enhancement to the picture.

Color Temp
Adjust the screen color temperature 9300/ 6500/ 5800.

Display Ratio
Select between 16x9 or 4x3.

Video Scan
Adjust the screen size to Normal/ Over/Under scan.

Volume
Control built-in speakers' output Volume.

10.Video Function (PC Mode Only)

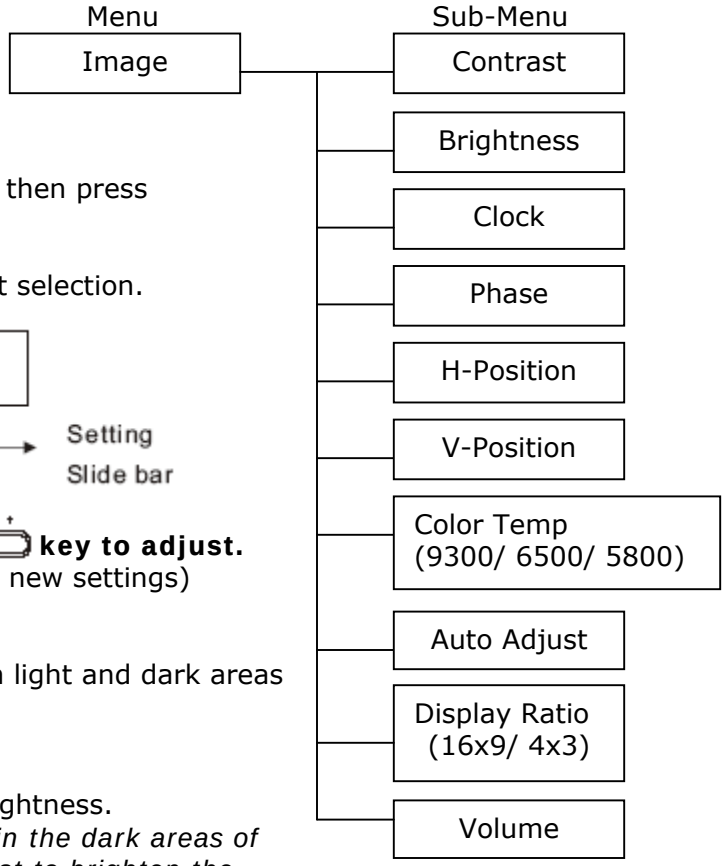
Press **SOURCE** to select an image input:

Press the FUNCTION button to bring up the OSD Menu.

Press ⇦ ⇨ again to select IMAGE, then press SELECT twice to enter submenu.

As shown, press ⇦ ⇨ keys to adjust selection.

Note: On remote control, press [-] [+] key to adjust.
(After adjustment, the monitor will store new settings)



Contrast
Permits adjustment for contrast between light and dark areas of the picture.

Brightness
Adjusts the overall picture shade and brightness.
Tip: Use the Brightness to make details in the dark areas of the picture to be just visible, and Contrast to brighten the picture without causing video noise and foreheads to turn white.

Clock
Is used to adjust to the best picture quality. It adjusts the number of the clock pixels across one timeline. Therefore it can affect the picture's position and size.
Note: Improper adjustment will caused image failure.

Phase
Is used to adjust to the best picture quality. It adjusts the sampling phase across one pixel at a time. When the phase is not adjusted properly, the picture will be unclear. Therefore this value should be carefully adjusted.
Note: Improper adjustment will caused image failure.

H-Position	Allows adjustment for the horizontal position.
V-Position	Allows adjustment for the vertical position.
Color Temp	Adjust the screen color temperature 9300/ 6500/ 5800.
Auto Adjust	Auto detect screen detail data, such as clock and phase.
Display Ratio	Select between 16x9 or 4x3.
Volume	Control built-in speakers' output volume.

11. Device Connectors

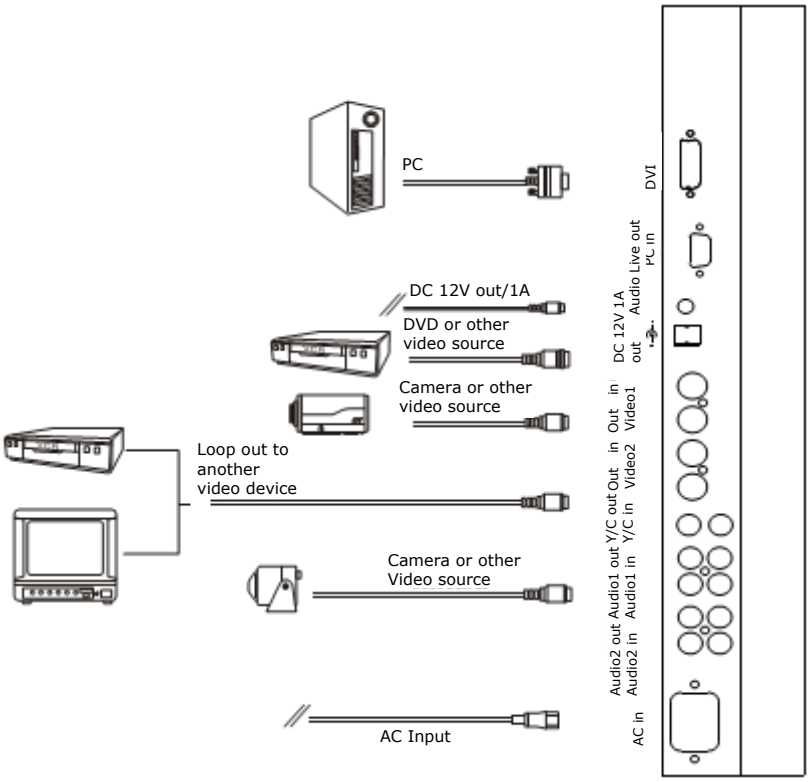


Figure 1. LCD Connectors

a) Connect PC to Monitor through VGA connector as shown in the above picture

b) Connect External device such as DVD or Game Player to Monitor as shown in the above picture

c) Connect CCD Camera 1 and 2 to Monitor through Video Input 1 and 2 (BNC Connect) as shown in the above picture

d) Support Resolution:

Note: Please refer to Specification for auto detection after changing resolution setting.

Table 1. Support Resolutions

640 x 480 60Hz	800 x 600 60Hz	1024 x 768 60Hz	1366 x 768 60Hz
640 x 480 72Hz	800 x 600 70Hz	1024 x 768 70Hz	
640 x 480 75Hz	800 x 600 72Hz	1024 x 768 75Hz	
	800 x 600 75Hz		

12.Specifications

Electrical

		45M32
LCD Panel		31.5" TFT
Aspect Ratio		16:9 or 4:3
Display Area		697.68mm x 392.25mm
Resolution		1366 x 768
Brightness		500 cd/m^2
Contrast Ratio		1500:1
Response Time		8ms
Video Angle		Up 89^0, Down 89^0, Left 89^0, Right 89^0
Video Input / Output Signal	Video	Composite video, 1Vp-p @75ohm BNC x2 Input
		BNC x2 Output (Auto Termination)
		RS232 (optional)
	S-Video	4 pin Min Din x1 Input / Output
	PC-IN	D-Sub 15 pin (VGA) / DVI input (optional)
Audio In / Out		RCA (L/R) x2 set Input / Output RCA (L/R) x2 set Input / Output
In / Out Impedance		75 Ohms (Auto Termination)
3D Comb Filter		YES
PIP / POP		YES
Operation		OSD control function
Power Source		90~260VAC 60Hz
Power Consumption		1.5A / 168W

Environmental

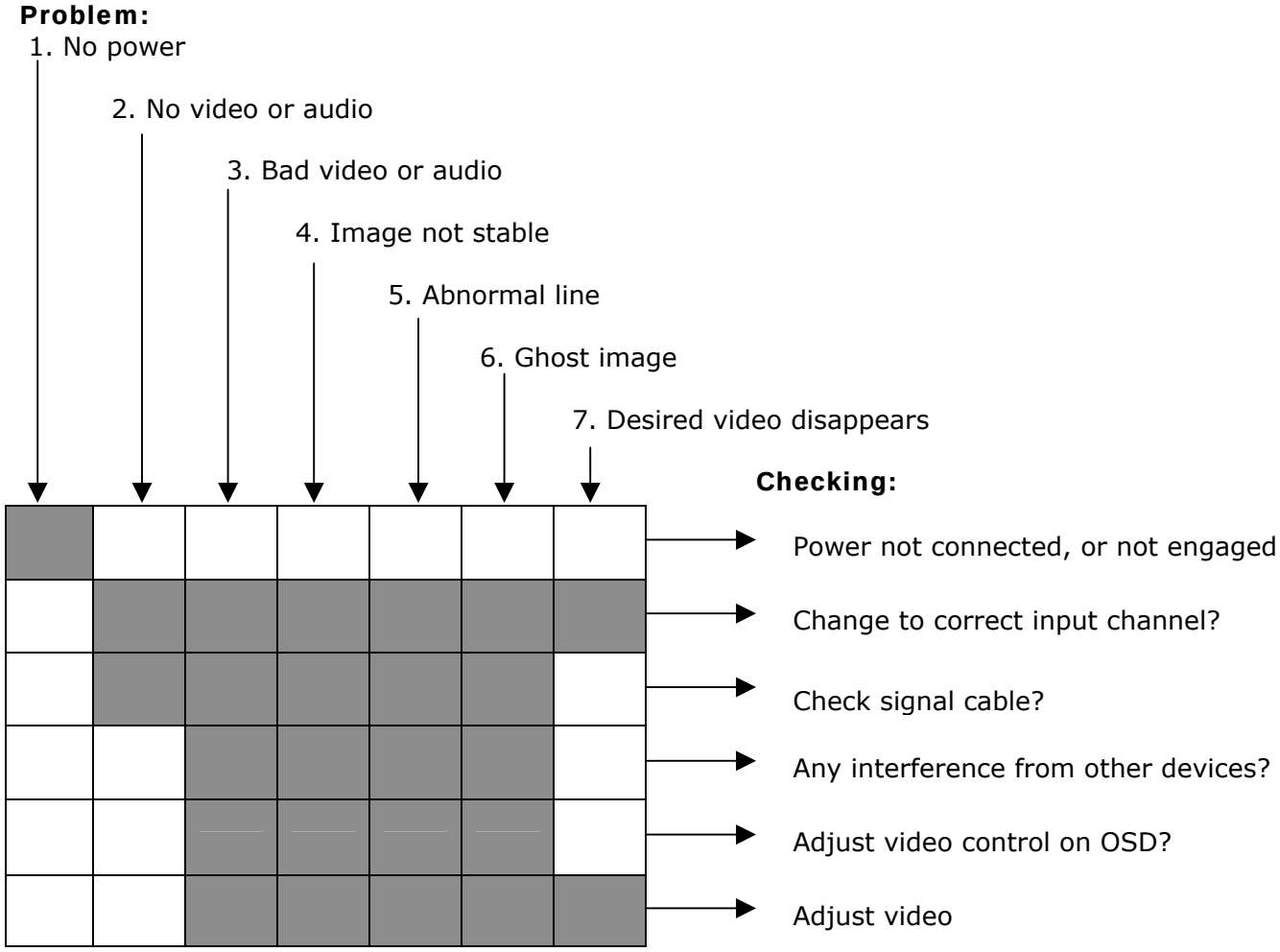
Ambient Operating Temperature	0° C ~ 50° C (32°F ~ 122°F)
Operating Humidity	20% - 80%

Mechanical

Dimensions WxHxD		785.6mm x 477.2mm x 102.68mm (30.92" x 18.78" x 4.04") without table stand
Weight		12.3 kg (27.11 lbs) without table stand
Accessories *Included*		Power cord 15 pin D-sub Audio cable Remote control Bracket: VESA 100 standard
Accessories *Optional*		Table stand and RS232 cable
Connectors	Video	2CH BNC input / output
	Audio	2CH RCA R. L. input / output
	PC	15-pin D-sub connector
	S-Video	4-pin min-din

13. Appendixes

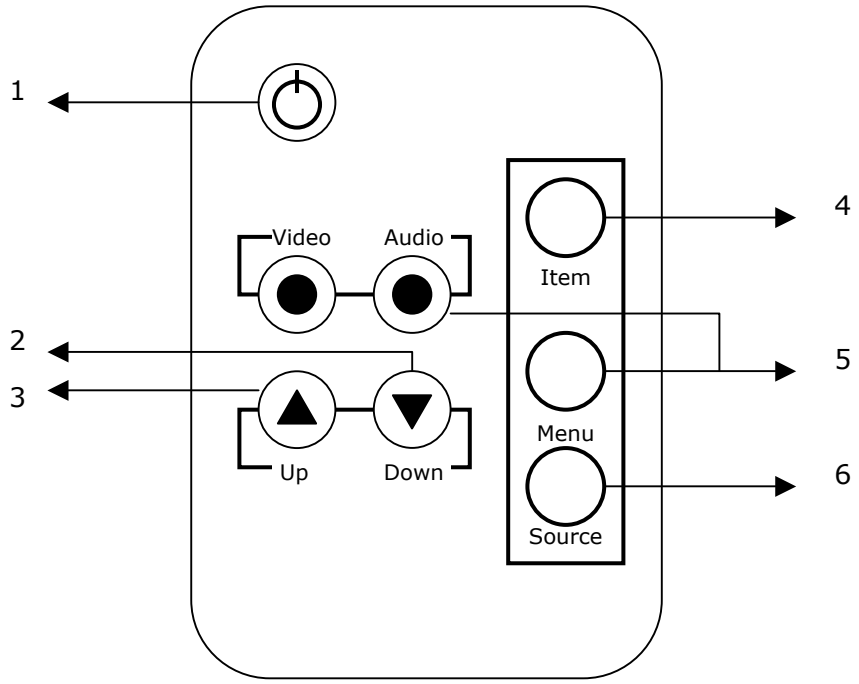
13.1. Troubleshooting



13.2. Package Contents

A. LCD monitor
B. Power cord
C. Accessory kit
    a. DB15 – DB15 VGA cable
    b. 1/8" male to 1/8" male mini stereo plug cable
D. User manual
E. 12V Power Adapter
F. Remote Control

14.Remote Control



1. **Power**
   Monitor power ON / OFF. At OFF mode, monitor will be on standby status
   LED - Green Light -- Power On
   Red Light -- Standby mode

2. **Adjust ▼**
   Decrease the value on the OSD menu or turn ON / OFF function

3. **Adjust ▲**
   Increase the value on the OSD menu or turn ON / OFF function

4. **Item (Option)**
   PIP / POP selection

5. **Menu**
   OSD menu ON / OFF control

6. **Source**
   Select input signal from AV1, AV2, S-Video or PC

***Note:** PIP&POP Operating (Option)---Remote control

A. Push "ITEM" key to open Sub-picture
   Then push "ITEM" key to select the Sub-picture size on screen
   1/16-->1/9-->1/4-->1/2--->Full (Main-picture)
B. Push down key to select Sub-picture position on screen
C. Push up key to select the Sub-picture source
D. Push source key to select Main-picture source

15.Contact

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Videology Imaging Solutions Inc. is an ISO 9001 registered video camera developer and manufacturer serving security, industrial and machine vision, biometric and specialty OEM markets. The main facility is based in Greenville, Rhode Island, USA and Videology Imaging Solutions BV is located in Uden The Netherlands. The company designs, develops, manufactures and distributes video, image acquisition and display products.